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A NEW GENUS OF MADICOLOUS BEETLES FROM ECUADOR (COLEOPTERA: HYDROPHILIDAE: HYDROBIINAE)

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Abstract.—A new hydrobiine hydrophilid water beetle from Ecuador, *Dieroxenus cremnobates,* new genus, new species, is described, illustrated, and interpolated into previously published keys to related genera. Notes on the biotope and the genera of hydrophilids with which the new taxon was associated in its madicolous habitat are included.

During a search in madicolous habitats for aquatic beetles belonging to the genus *Oocyclus,* specimens of an unrecognized genus of hydrophilid beetles were encountered and collected on several occasions. An examination of these beetles and comparisons with described genera indicate that they represent a new genus belonging to the subfamily Hydrobiinae, the tribe Hydrobiini, and the subtribe Hydrobiae. This new genus, presently known only from the Andean Cordillera of Ecuador, is described below.

Hydrobiini

Dieroxenus, new genus

Head with clypeus expanded and shelflike in front of eyes. Clypeus strongly emarginate anteromedially but without membranous preclypeal area. Eyes, viewed from above, moderately transverse; feebly reniform; widely separated. Antenna 8 segmented; 2 basal, 2 intermediate, 1 cupule, and 3 club segments. Maxillary palpus robust; short, about as long as antennae; 4 segmented; basal segment very short, second (pseudobasal) segment straight and more robust than subsequent segments; second and third segments about equal in length; fourth segment slightly longer than third segment. Mentum strongly marginate-foveate apicomedially. Prosternum not carinate. Mesosternum with a fine, very low longitudinal carina medially on posterior half and extending between mid-coxae. Front, middle, and hind femora densely pubescent on basal three-fourths, apices glabrous. Metatrochanters not elongated. Metatibiae straight. Tarsal formula 5-5-5. Pronotum with posterolateral angles rounded. Elytron with sutural stria extending from apex to about basal fourth. Epipleura sharply declivous along entire length, not horizontal.

Type-species of the genus.—Dieroxenus cremnobates, new species. Gender: masculine.

Etymology.—Dieroxenus from dieros, G.—wet, plus xenos, G.—stranger; i.e., wet stranger, because the beetles were unknown and they were living on seeps or adjacent to waterfalls under a thin film of water trickling over the rock surfaces.

The new genus described above does not fit easily into either of the two subtribes in d'Orchymont's (1942) study of the tribe Hydrobiini. The new genus superficially resembles a convex species of *Enochrus* (subtribe Helocharae) but close examination shows the following differences; the characteristics for *Dieroxenus* given first followed by those for *Enochrus*: (1) antenna 8 segmented vs. 9 segmented; (2) maxillary palpus robust, as long as antenna vs. usually slender and longer than antenna; (3) last segment of maxillary palpus articulated toward mouth vs. articulated outward away from mouth; (4) second segment of maxillary palpus straight vs. convex anteriorly; (5) preclypeus absent vs. present; (6) mentum strongly emarginate-foveate apicomedially vs. not emarginate-foveate; (7) mesosternum feebly longitudinally carinate vs. longitudinally laminate. Therefore, because the majority of its characteristics show greater affinities to the subtribe Hydrobiiae rather than to the Helocharae, I have assigned *Dieroxenus* to the Hydrobiiae.

In d'Orchymont's (1942) key to the genera belonging to the Hydrobiiae, *Dieroxenus* keys to the first rubric in couplet 13 because the prosternum is non-carinate. However, the mesosternum has a fine, low, longitudinal carina instead of being non-carinate and the metafemur is pubescent on the basal three-fourths instead of only basally or only along the foremost edge. The new genus described above may be distinguished from the others in the subtribe by interpolating the following in place of d'Orchymont's couplet 13.

13. Prosternum non-carinate **13a**
– Prosternum carinate longitudinally ..... *Paracymus* Thomson
13a. Mesosternum non-carinate longitudinally or with no longitudinal median carina behind the anterior transverse carina **14**
13b. Mesosternum with a fine very low, longitudinal carina between mid coxae and extending over posterior half of mesosternum (Fig. 4) ..... *Dieroxenus* Spangler

Dieroxenus cremnobates, new species
Figs. 1–8

Holotype male.—Length 3.4 mm, greatest width 1.9 mm at midlength. Color of head piceous except margins in front of eyes dark reddish brown. Pronotum piceous discally and dark reddish brown laterally and along anterior margin. Elytra very dark reddish brown, sides lighter reddish brown. Venter piceous except maxillary and labial palpi, and basal 5 segments of antennae yellowish brown; antennal club darker brown; legs reddish brown.

Fig. 1. *Dieroxenus cremnobates*, n. gen., n. sp., habitus view.

Head finely, moderately densely punctate, punctures separated by one and one-half to two times their width except a few very coarse punctures at anteromedial corners of eyes and several at anterolateral corners of clypeus. Clypeus in front of eyes (Fig. 2) broadly expanded, shelflike; arcuately

emarginate anteromedially; without preclypeus. Labrum more finely but as densely punctate as head; feebly emarginate medially. Eyes separated by about 5 times their width. Ventral surface of head finely alutaceous behind eyes on gular region. Mentum deeply emarginate and deeply foveate apicomedially (Fig. 3) and finely, very sparsely punctate. Antenna 8 segmented (Fig. 2); 2 basals, 2 intermediates, 1 cupule, and 3 club segments. Maxillary palpus 4 segmented, about as long as antenna; basal segment very short; second (pseudobasal) segment longest, slightly longer than penultimate segment. Labial palpus small (Fig. 3), 3 segmented; first segment shortest, about half as long as second segment; second segment about as long as ultimate segment, with a single long yellow seta apicodorsally; ultimate segment broadest, compressed laterally, bearing a single long yellow seta on apicoventral angle.

Pronotum slightly more than twice as wide as long; widely margined laterally, finely margined anteriorly, and very finely posteriorly; punctures slightly coarser than those on head and separated by one-half to one times their width except an anterolateral and a mediolateral series of very coarse punctures; anterolateral and posterolateral angles rounded. Prosternum noncarinate (Fig. 2).

Elytron convex, distinctly margined laterally, widest slightly behind midlength. Surface with punctures finer and sparser than those of pronotum except three incomplete serial rows of coarser punctures discally, one similar but more distinct lateral row, and rudiments of another row along elytral margin. Sutural stria present from apex to about basal fourth. Epipleura strongly vertical. Scutellum an equal-sided triangle.

Mesosternum finely alutaceous; with a fine, very low longitudinal carina on posterior half and extending between mid-coxae (Fig. 4). Metasternum finely alutaceous and punctate except a small glabrous swollen area on midline in front of inner angles of hind coxae and across hind margin adjacent to hind coxae.

Front, middle, and hind femora densely covered with short hydrofuge pubescence on basal three-fourths, apices glabrous. Metatrochanters not elongated. Metatibiae not arcuate. Tarsal formula 5-5-5. Foreleg with segments 1 to 4 about equal in length; last segment about as long as segments 1 to 4 combined. Midleg and hindleg both with basal segment short, terminating obliquely apically; second segment longer than third segment; third and fourth segments shortest and subequal; fifth segment slightly longer than third and fourth segments combined. Abdominal sterna finely alutaceous; covered with moderately dense, short, yellowish hydrofuge pubescence; last sternum with very shallow apicomedial notch (Fig. 5).

Genitalia as illustrated (Figs. 6, 7).

Allotype.—Similar to male.

Variations.—Males vary in length from 2.8 mm to 3.3 mm; females vary

Fig. 2. *Dieroxenus cremnobates,* n. sp., head and appendages, ventral view; prosternum, 80×.

Fig. 3. *Dieroxenus cremnobates,* n. sp., mentum and labial palpi, 210×.

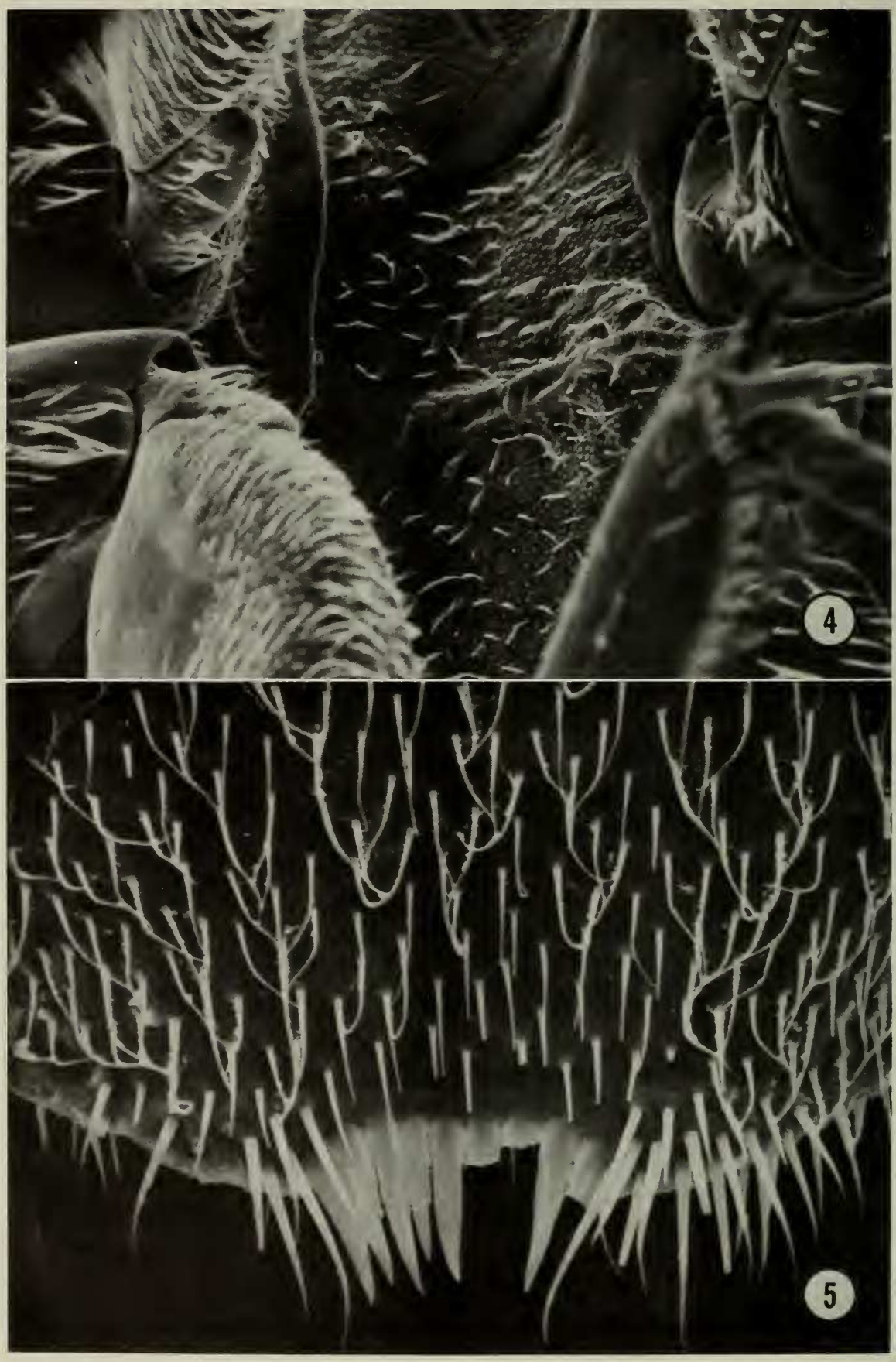
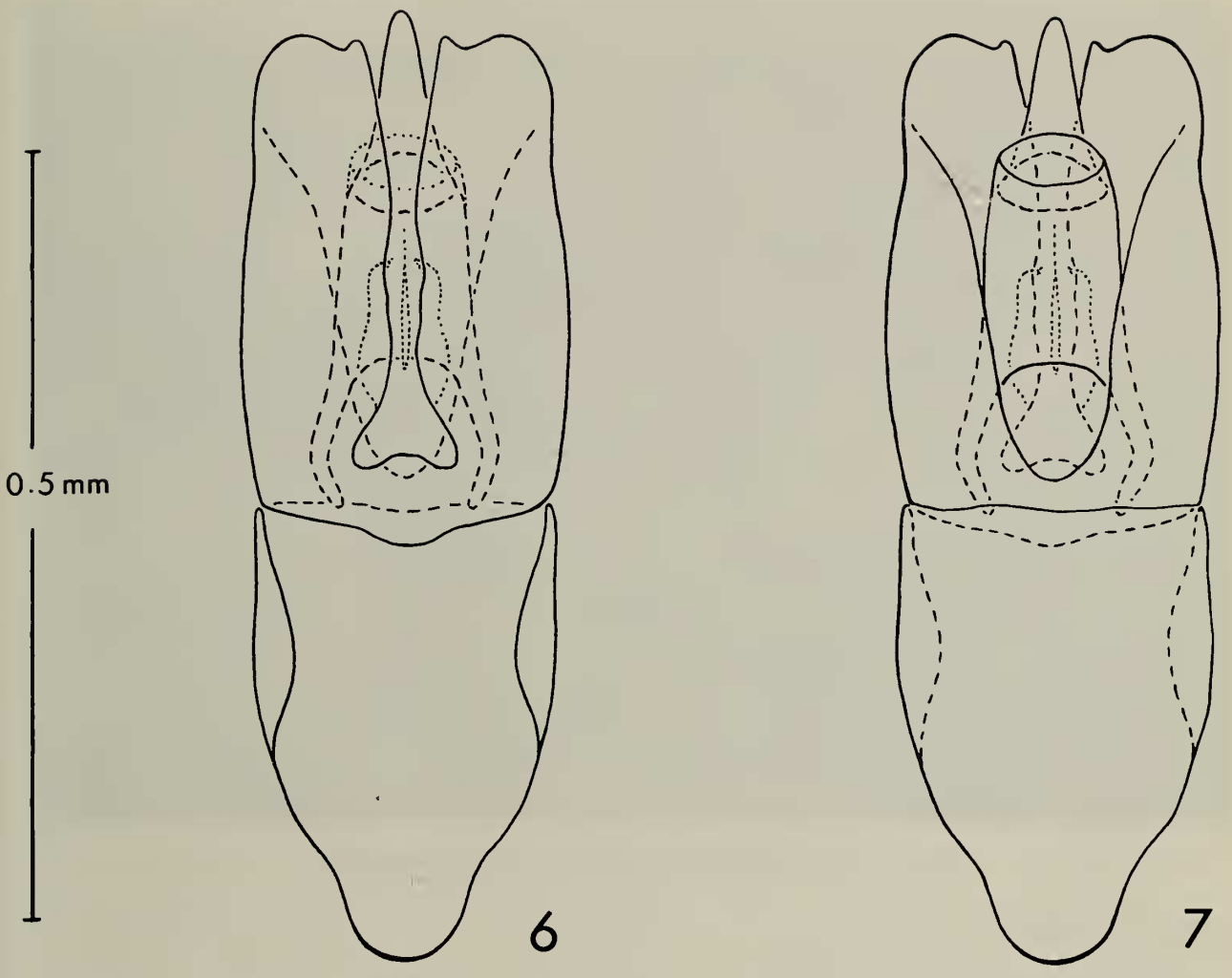


Fig. 4. *Dieroxenus cremnobates*, n. sp., mesosternum, oblique view, head to left, 190×.

Fig. 5. *Dieroxenus cremnobates*, n. sp., last abdominal sternum, 500×.



Figs. 6–7. *Dieroxenus cremnobates*, n. sp., male genitalia: **6**, dorsal view; **7**, ventral view.

from 2.7 mm to 3.5 mm. In teneral and mature specimens the head is piceous, however, in teneral specimens the pronotum and elytra are uniformly reddish brown instead of broadly piceous on discal areas.

Type-data.—Holotype: ECUADOR, Napo, Baeza (72 km E), 16 May 1975, Spangler, Langley, and Cohen; USNM Type No. 73590, deposited in the National Museum of Natural History, Smithsonian Institution. Allotype: same data as holotype. Paratypes: same data as holotype, 44 ♂♂, 42 ♀♀; ECUADOR, Tunguruhua: Baños (35 km E), 29 May 1975, Langley, Cohen, and Monnig, 8 ♂♂, 6 ♀♀; Baños (18 km E), 25 Jan. 1976, Spangler, et al., 15 ♂♂, 18 ♀♀; Baños (20 km E), 28 Jan. 1976, Spangler et al., 7 ♂♂, 6 ♀♀; Baños (39 km E), 28 Jan. 1976, Spangler et al., 2 ♀♀.

Paratypes will be deposited in the following entomological collections: American Museum of Natural History, New York; British Museum (Natural History), London; California Academy of Sciences, San Francisco; Canadian National Collection, Ottawa, Canada; Institut für Pflanzanschutzforschung Zweigstelle, Eberswalde, East Germany; Museo Argentino de Ciencias Naturales, "Bernardino Rivadavia," Buenos Aires, Argentina; Museum of Comparative Zoology, Cambridge; Museo Nacional de Historia

Fig. 8. *Dieroxenus cremnobates*, n. sp., biotope.

Natural, Santiago, Chile; Museum für Naturkunde, East Berlin, Deutsche Demokratische Republik; Museum National d'Histoire Naturelle, Paris, France; Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgique; and Zoologische Sammlung Bayerischen Staates, Munchen, West Germany.

Etymology.—cremnobates from kremnobates, G.—frequenter of steep places in reference to the nearly vertical aquatic habitats on which these beetles were found.

Habitat.—The type-specimens were found on seeps, i.e., on the wet surfaces of rocks and in crevices of these rocks which were exposed by road cuts. The habitat at 18 km east of Baños is illustrated in the photograph (Fig. 8). Specimens of this new genus were found intermixed with members of the hydrophilid genera *Oocyclus* and *Anacaena* on the seeps.

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Reference Cited

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